Conventionality-Governed Logical Metonymy

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Abstract

I propose an account of logical metonymy which is governed by lexical specification of usage conventions. Extended corpus analysis is presented in favor of this proposal. The data indicates an extremely narrow range of use of metonymic constructions, suggesting that previous approaches which assume that this type of metonymy is a productive phenomenon constrained by a few rules fail to recognize its fundamental restrictedness. I propose instead that properties specified in the semantic component of individual lexical items will determine whether and how those items participate in metonymy constructions.

Keywords: Lexical Semantics, Corpus Analysis

1 Introduction

Logical metonymy is a phenomenon in which more meaning than is directly attributable to sentential components arises with certain verb/noun combinations. It occurs for some verbs having alternate syntactic complement forms with only a single semantic interpretation. In particular, logical metonymy refers to the use of a noun phrase to suggest an event associated with that noun phrase — it is *metonymy* (e.g. Nunberg 1978) in the sense that one phrase is used in place of another and *logical* in that it is triggered by type requirements which a verb places onto its arguments. An example of the phenomenon appears in (1)-(2). In both of these sets of sentences, the two sentences express the same meaning although in the (b) sentences no reading event is explicitly mentioned.[1] These sentences, then, exemplify logical metonymy. The verbs require eventive arguments and so the noun phrase complements are coerced to an eventive interpretation.

(1) a. John began reading/to read the book.
b. John began the book.

(2) a. John enjoyed reading the book.
b. John enjoyed the book.

[1] For the purposes of this paper, we are ignoring subtle differences which might exist between the use of infinitival VP complements and progressive (-ing) forms of the VP complement of aspectual verbs. See Freed (1979) for discussion of this issue.

Much discussion in recent lexical semantic literature has focused on logical metonymy (Pustejovsky 1991, 1995), linguistic constraints on the phenomenon (Godard & Jayez 1993, Pustejovsky & Bouillon 1995), and the influence of discourse context on their interpretation (Lascarides & Copestake 1995, Verspoor 1996). In these approaches, the systematic syntactic ambiguity of the verbs is handled via an operation of *type coercion* (either triggered by constraints on complement type or internalised in the verb semantics) such that the logical forms for each verb-complement form will be identical. The coercion which must occur to get the appropriate readings of the logical metonymies require that a missing element of meaning, in the cases of (1) and (2) a reading event, be introduced. This element is suggested by lexical defaults associated with the noun in the complement noun phrase. Pustejovsky (1991) proposes that the element comes from one of the roles in the noun's lexical semantic structure, the *qualia structure*, which represents the defining attributes of an object. Type coercion looks in the first instance to the qualia structure for something of the type required by the verb.

The existing approaches to logical metonymy assume that a full qualia structure is represented in each noun's lexical semantics, incorporating four roles — CONSTITUTIVE: the relation between the object and its constituent parts; FORMAL: that which distinguishes object within a larger domain; TELIC: the function of the object, what is done with it; and AGENTIVE: how the object came into being. Implausible metonymies are ruled out via constraints on the type coercion process. This work seems largely to ignore the role of conventionality in interpreting logical metonymies. Analysis of a wider range of data than previously considered reveals more limited possibilities for the application of qualia structure-driven type coercion in explaining logical metonymy than predicted by the highly productive generative accounts proposed, particularly with aspectual verbs like *begin*. In response to this, I will reject proposed aspectual constraints on type coercion and offer an account which is governed by lexical specification of usage conventions: i.e. properties specified in the semantic component of lexical items will determine whether and how those items can participate in metonymy constructions. In particular, I will argue on the basis of corpus data that not every noun has a telic role specified in its qualia structure, and that this can account for the infelicity of many metonymy constructions.

The analysis of logical metonymy which I will present is based on certain assumptions about what semantic information should be specified in lexical entries. I assume that information like qualia structure roles is absent from the lexicon unless linguistically justified. Specifically, there is justification for postulating that a certain piece of knowledge is lexicalised only when a particular linguistic phenomenon cannot be explained purely in terms of world knowledge. In this way we can restrict the amount of information to be represented in the already overcrowded lexicon.

2 Constraints on Logical Metonymy

2.1 The proposals

Godard & Jayez (1993) propose constraints which the French *commencer* (=*begin*) imposes on its NP complement: i) the complement must refer to a bounded entity (to account for

(3)), ii) in the reconstructed event the object denoted by the NP is semantically controlled by the entity that is the subject of *commencer* (restricting metonymy to a control use of *begin*, to account for (4)), iii) the reconstructed event should be a kind of *modification* to the object referred to by the NP (to rule out sentences like (5); expressing an intuition that the object usually comes into being, is consumed, or undergoes a change of state).

(3) John began the cheese/*some cheese.

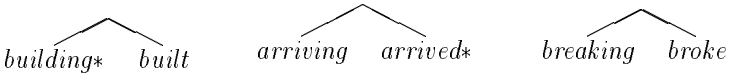
(4) *At that moment John began a great contempt for politicians.

(5) John began **(moving)* the stone / **(to go through)* the tunnel.

I will generalise from these constraints in my proposals, adopting (i) and (ii), but replacing (iii) with more specific claims about the reconstructed events.

Pustejovsky & Bouillon (1995) use Godard & Jayez (1993)'s analysis to develop constraints on type coercion in terms of the aspectual properties of the reconstructed event. Their account relies on a structured representation of events, in which subevents are represented and the "focus" of the event is marked as the *head* of the event structure. Pustejovsky & Bouillon provide examples of headed transitions, proposing that *build* is a *left-headed event structure* (event-focus is on the first subevent, the activity of building), *arrive* is a *right-headed event structure* (focus is on the actual arrival rather than the pre-arrival process), and *break* is lexically unspecified with respect to headedness. The relevant event structures are shown in (6), with the asterisk indicating the headed sub-event. Left-headed structures correspond to accomplishments, while right-headed structures correspond to achievements.

(6)



Another element of the Pustejovsky & Bouillon (1995) proposal is a distinction between control and raising aspectual verbs. Using tests proposed by Perlmutter (1970), they argue that *begin* is ambiguous between control and raising uses. The aspectual constraint on type coercion which they propose is that the complement of *begin* must be a TRANSITION, in particular a left-headed transition. Sentences like (3b) are therefore ruled out because *eating some cheese* is an activity, not a left-headed transition. On a raising use, the complement can have any event type, but no coercion of an NP argument is possible, so sentences like those in (4) are ruled out. Sentences like those in (5) are ruled out simply because the appropriate values are not available in the qualia structures for *stone* and *tunnel*. Other sentences, e.g. (7), are ruled out because the reconstructed event has the wrong aspectual type for a control reading — the events are activities, rather than transitions.

(7) John began the highway. *(*driving on)* / dictionary. *(*consulting)*

2.2 Problems remaining

The Pustejovsky & Bouillon (1995) aspectual restrictions on the control interpretation of *begin* correctly rule out a large number of metonymic sentences, but the sentences in (8)

would (incorrectly) not be ruled out, since the telic events (in italics in the example) are transitions. In contrast, sentences (9), conveying activities, would be ruled out although they are felicitous. More than a simple aspectual restriction is necessary to explain the data.

(8) a. *John began the film. *(watching)*
b. *John began the door. *(opening, walking through)*
c. *John began the nails. *(hammering in)*

(9) a. John began daycare at his mom's work. *(attending)*
b. John began acupuncture in April and homeopathy in August. *(undergoing)*
c. John began the violin when he was five. *(playing)*
d. The two women began the serious business of the day, gossiping. *(doing)*
e. The two older girls had already begun boarding school. *(attending)*

3 Corpus-supported Conventions

To gain a clear view of the possible range of logical metonymy data, it is necessary to look to corpora of spoken and written text. This investigation will give a sense of how widespread the use of logical metonymy is, and how far qualia structure can go towards predicting the interpretations that the examples are given in context. I have therefore consulted both the Lancaster-Oslo/Bergen (LOB) Corpus and the British National Corpus (BNC) for relevant data.[2] These are corpora of British English, the LOB incorporating 500 written text samples of about 2,000 words each, the BNC consisting of over 100 million words of a wide variety of written text (90%) and transcripts of spoken language (10%). I focused mainly on logical metonymies with *begin*, but also looked at those for *finish*.

3.1 The Analysis: Methodology and Assumptions

The first phase of the corpus analysis involved extracting all sentences containing *begin* and *finish* in any of their inflected forms. This was done in the case of the LOB simply by utilising regular expression matching commands standard under UNIX. The BNC demanded a more advanced mechanism due to its size and structure, and hence the CORSET corpus search toolkit (Corley 1996) was used. This tool enabled extraction of only those sentences which do not have an explicit VP complement. Further narrowing of the sentences to be examined was accomplished via regular expression matching, picking out only those sentences in which the aspectual verbs were followed by a noun phrase. At the end of this phase, I had a large collection of sentences which were potentially metonymic, as each sentence contained an aspectual verb followed by a non-VP element.

The second phase involved identifying which of the collected sentences were actually metonymic. As neither of the two corpora contains any kind of semantic tagging, much of this work had to be done by hand. The following cases were eliminated from the sets of sentences:

[2]See `http://www.hd.uib.no/cd-info.html` for additional information about the LOB and `http://info.ox.ac.uk:80/bnc/` for more information about the BNC.

- Sentences in which *beginning* or *finish* are used as a noun, e.g. *From the very beginning the Section Office asked groups for help* and *The finish of the wood ....*

- Sentences in which the noun phrase following the aspectual verb was not a complement of the verb, e.g. *As the show begins [...]*

- Sentences in which the aspectual verb appears as part of a larger phrase which seems to impose different interpretation constraints on the phrase than on the metonymic constructions. These include *begin X with, begin X by, finish X with, finish X off, finish X by* (*begin/finish the chapter with the words "[...]", begin/finish the book by giving you an example, finish things off*).

- Sentences containing different senses of the aspectual verbs: the sense of *begin* meaning *found* (*I began my business in 1983*), the sense meaning (approximately) *to initiate* (*She began a reassuring smile, Then began the notion/habit/ritual of [...]*); the sense of *finish* meaning *use up* (*finish the ammunition, finish the toilet paper*), and the sense meaning *end* (*The poses finishing the musical phrase*).

- Sentences in which the noun phrase complement is **eventive**, that is directly expressing an event such that no metonymic construction is necessary. This case includes deverbal nouns (*begin a look, begin the cut, begin the inspection*) and other instances such as *begin the game* and *begin a diet*. In these cases, no type coercion is necessary to satisfy the requirements of the aspectual verbs.

- Sentences in which the noun phrase complement is **temporal**, that is referring to something with temporal extent (*begin a relationship, begin the first term of school*). Again, no type coercion is necessary in these cases: the aspectual verbs pick out a particular region of the temporal extent associated with these nouns (Freed 1979).

- Certain sentences containing **"event-objects"** as complements: dual nature NPs which seem to have a natural interpretation as an event, but which can also be referred to as an object. These can either be interpreted as events directly or, with certain restrictions, metonymically on an object interpretation, as shown in (10). Only the metonymic uses were included in the analysis.

(10)
a. John began the speech/lesson. *(giving)* — classified as eventive
b. John began the speech/lesson. (*writing*) — metonymic
c. *John began the speech/lesson. *(hearing, listening to)* — failed metonymy
d. John began the lessons. (*taking*) — metonymic

The third and final phase was to read through each of the metonymic sentences in context in order to determine the interpretation intended by the speaker/author. In addition, the whole procedure was repeated to find metonymic instances of the phrase *begin on* followed by a noun phrase for purposes of comparison with *begin*. The results of these analyses will be introduced in the next section. They provide the basis for the alternate conception of logical metonymy to be put forth in section 3.3.

3.2 The Data

The number of occurrences of logical metonymies involving *begin* in the corpora is very low, suggesting that this is not a pervasive phenomenon, at least for this particular verb. Only three relevant instances of *begin* metonymies were found in the LOB, and only 164 were found in the BNC. More significant are the relative figures: there are 40,407 sentences containing verbal forms of *begin* in the BNC. After phase 1 of the analysis of the BNC 4,470 sentences containing *begin* followed by a noun phrase remained as potentially metonymic. Only 3.67% of these were actually metonymic — 0.41% of all sentences containing verbal forms of *begin*. The LOB figures are even lower. Out of 172 sentences containing *begin* followed by a noun phrase in the LOB, only 1.7% of these were metonymic.

For *finish*, the frequency of the phenomenon is much higher. Out of 11,072 uses of finish as a verb, there were 2,799 occurrences of *finish* followed by a noun phrase. Out of a sample of 940 of these which were analysed, more than a third (319) were metonymic. What is interesting to look at, however, is the distribution of the metonymy types for both of these aspectual verbs as compared to that for *begin on*. This information is summarised in table 1.[3]

This table shows the number and proportion, relative to the whole set of metonymies for the particular aspectual verb in question (as indicated by the column heading), of each different metonymic interpretation found in the corpus. They are divided into **Agentive**, **Telic**, and **Context**, indicating where the missing event needed in the interpretation seems to come from. The noun phrase following the eventive verb in the interpretations listed either corresponds to the noun phrase actually found in the corpus examples (those in regular font) or to a generalisation over the types of noun phrases which were found on that interpretation in the corpus (those in small capitals). So, for example, the value 34 in the first row of agentive interpretations for *begin* indicates that 34 instances of *begin* WRITTEN_OBJECT (such as *begin the book* and *begin the diary*) occurred in the BNC on a *writing* interpretation. The OTHER AGENTIVE category includes all examples specifying the creating of an object in the way appropriate to that object, such as *begin (digging) the tunnel* and *begin (painting) the portrait*, while the OTHER TELIC category groups together very low frequency occurrences of other interpretations which seem to come from the telic role of the noun's qualia structure rather than from context.

It is clear from the table that *begin* and *finish* metonymies tend to be interpreted on the basis of information in the qualia structure of their complement noun rather than through the influence of context. Context plays a much larger role for the interpretation of *begin on*, suggesting a fundamental difference between the aspectual verbs and *begin on* with respect to the interaction of the verb with the meaning of the complement noun. This will have implications for the treatment of these verbs as proposed in Section 4.

What also becomes clear upon inspection of table 1 is that the range of possible metonymies is actually quite small. If we consider the size of the BNC, the fact that telic metonymies occur for only approximately 20 different categories of nouns is striking. The

[3] A tally of one half was allocated to each of two possible options if the intended interpretation of the metonymy was not entirely clear from the context. For example, *begin the psalms* could mean *begin reading the psalms* or *begin singing the psalms*.

		Begin			Finish			Begin on		
Agentive										
	write WRITTEN_OBJECT	34	=	20.7%	44	=	13.8%	0	=	0%
	say sentence	4	=	2.4%	7	=	2.2%	0	=	0%
	have family	1	=	0.6%	0	=	0%	0	=	0%
	OTHER AGENTIVE	26	=	15.9%	43	=	13.5%	4	=	16%
Subtotal Agentive		65	=	39.6%	94	=	29.5%	4	=	16%
Telic										
	eat FOOD/MEAL	11	=	6.7%	87	=	27.3%	1	=	4%
	drink LIQUID	0	=	0%	55	=	17.2%	0	=	0%
	tell STORY	20	=	12.2%	7	=	2.2%	0	=	0%
	attend school/classes	4	=	2.4%	22	=	6.9%	0	=	0%
	sing SONG	9	=	5.5%	6	=	1.9%	0	=	0%
	play MUSIC	7.5	=	4.6%	2	=	0.6%	1	=	4%
	read WRITTEN_OBJECT	2.5	=	1.5%	10	=	3.1%	0	=	0%
	serve (jail) sentence	8	=	4.9%	0	=	0%	0	=	0%
	smoke cigarette	0	=	0%	5	=	1.6%	0	=	0%
	do business	6	=	3.7%	1	=	0.3%	0	=	0%
	take MEDICINE/TREATMENT	5	=	3.0%	1	=	0.3%	2	=	8%
	do DEGREE	1	=	0.6%	6	=	1.9%	0	=	0%
	do homework	0	=	0%	5	=	1.6%	0	=	0%
	play GAME	4	=	2.4%	0	=	0%	0	=	0%
	argue CASE	3	=	1.8%	0	=	0%	0	=	0%
	present EVIDENCE	1	=	0.6%	2	=	0.6%	0	=	0%
	OTHER TELIC	9	=	5.5%	2	=	0.6%	1	=	4%
Subtotal Telic		91	=	55.4%	211	=	66.1%	5	=	20%
Context		8	=	4.9%	14	=	4.4%	16	=	64%

Table 1: Distribution of Logical Metonymies for *begin*, *finish*, and *begin on* in the BNC

BNC contains a varied collection of texts, covering many topics and therefore certainly referring to far more than 20 categories of nouns. We would expect a far wider range of metonymies on the assumption of a fully specified qualia structure for all nouns: in theory, every noun should be able to appear in the logical metonymy construction. Although a corpus cannot provide negative examples of the use of the construction — that is, ungrammatical or infelicitous examples — and therefore does not give conclusive evidence in favour of the restrictiveness of telic role-centred interpretation of metonymies, the data retrieved in this analysis do suggest that the use of the construction is limited to only a few specific cases. Agentive role-centred metonymies occur for a wider range of objects, which share the property of being artifacts or at least having a clear way in which they come into existence. The information in the agentive role is therefore much more uniform across objects than that in the telic role: all agentive events are creation events. These facts will form the basis of our proposals about logical metonymy in the next section.

3.3 Conclusions about Logical Metonymy

What is strongly suggested by the data introduced in the previous section is that the metonymic construction is only used with the aspectual verbs *begin* and *finish* if the intended event is a strong default associated with the noun phrase. A purely pragmatic account which depends on world knowledge about the referent of the noun phrase would not be able to account for the limited range of nouns for which metonymies are possible and their low overall frequency, nor would it explain the restriction of metonymic events to events with a specific relation (agentive or telic) to the referent. I propose, therefore, that the use of the metonymic construction with aspectual verbs is restricted to either agentive events or **conventionalised** telic events associated with the complement noun phrase and that these events are represented in the lexical entries of nouns.

Metonymic sentences with *begin* and *finish* seem largely acceptable on a "coming into existence" interpretation — i.e. one in which the reconstructed event comes from the agentive role of the qualia structure — particularly if context aids in arriving at such an interpretation. Thus the data in (11) are certainly possible, although some may require contextual reinforcement. This conclusion is supported by the high proportion of agentive metonymies in the corpus, as reflected by the Agentive section of Table 1. A possible explanation of the general availability of the agentive role in metonymies is due to the uniformity of this role across objects, as mentioned above.

(11) John began the book *(writing)* / house *(building)* / dictionary *(compiling)* / cigarette *(rolling)* / highway *(constructing)* / door *(making)* / car *(building)* / cake *(baking)*

Interpretations other than the coming-into-existence (agentive) interpretation seem to be largely impossible, except in the restricted cases indicated by the Telic section of Table 1, exemplified by the selection of sentences in (12).

(12) John began the sandwich *(eating)* / beer *(drinking)* / story *(telling)* / book *(reading)* / cigarette *(smoking)* / solo *(playing)* / song *(singing)*

These cases are highly conventionalised. Their usage is triggered by lexical specification of the event conventionally associated with a particular noun[4] on a metonymic usage. As mentioned in the introduction, I assume that there is justification for postulating the lexicalisation of knowledge only when a particular linguistic phenomenon cannot be explained purely in terms of world knowledge. This applies to qualia structure: although general knowledge and experience of objects provide potential values for their telic roles, this information is only lexicalised when it is relevant to some linguistic phenomenon. In the case of logical metonymies, the distinction between the felicitous sentences in (12) and the infelicitous sentences in (8) cannot be explained solely on the basis of world knowledge of the relevant objects nor, as argued above, on the basis of aspectual restrictions on the general metonymic process. Instead, accurate modelling of the data can only be achieved through *selective lexicalisation* — lexicalisation only of highly conventionalised events which can be accessed in the metonymic process. Events which are not available

[4]The lexical entry for a noun may *inherit* the specification of the event from the representation of the class to which it belongs, so that e.g. all LIQUIDs will be specified for a telic event of drinking by virtue of that event being associated with the representation of the LIQUID class.

in metonymic coercions form part of world knowledge of an object, but must not be lexicalised.

Thus although feasible metonymic interpretations generally correspond to one of Pustejovsky's agentive or telic roles (i.e. contextual information does not often override the core semantic information found in the qualia structure), these do not always provide a feasible metonymic interpretation, as in (7)-(8). The infelicity of the specified interpretations of this data can, however, be explained via the assumption that for these cases, there is no event specified in the telic role of the nouns in the NP.

The approach outlined above is preferable to one which assumes that all nouns have a telic role specified and then rules some out with various constraints, since telic-role metonymy seems to be possible in only very limited instances, on highly conventionalised uses. Furthermore, the presence or absence of a particular metonymy holds across all aspectual verbs, as shown in (13). Similarly, the application of "metonymic adjectives" in (14) — i.e. adjectives which modify events rather than or in addition to objects, which therefore may require type coercion of the object — display the same patterns.

(13) a. John began/finished/started the book. *(writing/reading)*

b. John began/finished/started the nails. *(making/*hammering in)*

(14) a. i. John read a long book. *(physical length large/num pages large/long to read)*

ii. This is a fast book. *(fast to write/fast to read)*

b. i. John hammered in the long nails. *(physical length large/*long to hammer in)*

ii. This is a fast nail. *(?fast to make/*fast to hammer in)*

This shows that the presence or absence of a telic role for a particular object is consistent across metonymic constructions. I propose that for certain artifacts a telic event is conventionalised (for some reason presently unknown) and therefore specified lexically, available for access in metonymic constructions. For other artifacts such a telic event is not conventionalised or specified lexically and is not available in metonymic interpretation. Thus the nouns in (7)-(8) will not have telic roles specified, while the nouns in (9) and (12) will.

In contrast, the metonymic phrase *begin on + NP* generally seems to serve as a syntactic marker for pragmatic interpretation. It indicates only that something is being done with the NP object, leaving a more specific interpretation to be established using contextual information. It does not need to look to the qualia structure for a default interpretation, as context will provide the interpretation. This is supported by the high percentage of cases of this construction in the BNC which could only be interpreted on the basis of the surrounding context, as indicated in Table 1.

4 Sample lexical entries

On the basis of the above observations, I propose two lexical entries for coercing uses of *begin*. Other aspectual verbs will be represented analogously. I embed these proposals within an approach outlined by Lascarides & Copestake (1995) which takes into account the influence of context on the reconstruction of an event in a coercive environment. It

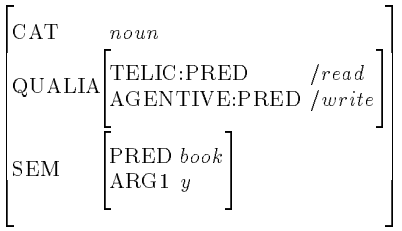


Figure 1: Part of the lexical entry for *book*, specifying default telic and agentive events

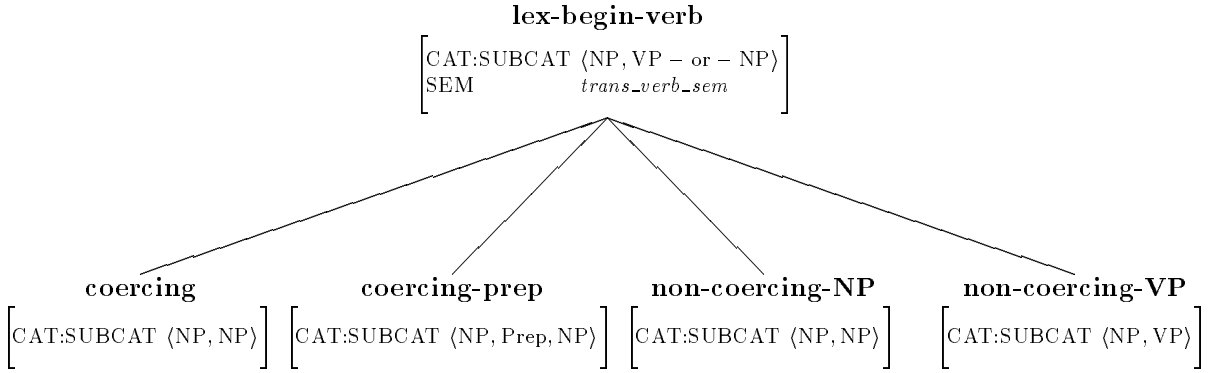


Figure 2: Type hierarchy for *begin*

is based on the idea that lexical defaults specified in qualia structure persist beyond the lexicon into the pragmatic component, and are therefore used in pragmatic reasoning. Two axioms are proposed, i) lexical generalisations normally apply in a discourse context and ii) conflicting discourse information wins over lexical defaults. These axioms together can be used to explain why (15a) has the interpretation (15b) rather than (15c).

(15) a. My goat eats anything. He really enjoyed your book.
b. The goat enjoyed eating your book.
c. The goat enjoyed reading your book.

A representation for nouns as in Figure 1 is assumed in this framework, in which qualia structure is distinct from other nominal semantics. Values are specified as default, necessary in an inheritance framework when subtypes of a lexical type require distinct qualia values, via the slash notation: information to the left of the slash (if any) is indefeasible and that to the right is defeasible. I additionally require that the qualia structure representation for different NP forms is "computed" appropriately using the qualia structure of the head noun. I also assume a type hierarchy for *begin* (see Figure 2) which corresponds to that proposed in Copestake & Briscoe (1995) for *enjoy*: a general *begin* type has subtypes corresponding to its different complement forms (the SUBCATegorization list shows

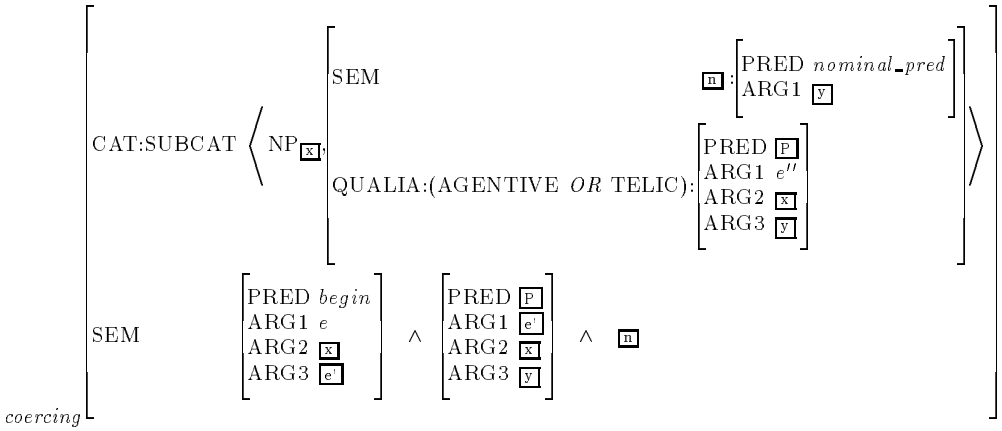


Figure 3: Coercing forms of *begin*: One entry picks out agentive role, the other telic role

the subject and the object of the verb), each of which has a specific semantic definition.

The metonymic relationship between *begin* and its complement NP can come from either the agentive or telic roles of the NP, as specified in Figure 3. This lexical entry defines the behaviour of *begin* on a metonymic use. Specifically, *begin* subcategorizes for a subject NP, whose referent is $\boxed{x}$, and an object NP, whose referent is $\boxed{y}$. The lexical entry picks out either the TELIC or AGENTIVE event specified in the qualia structure of the object NP, represented as $\boxed{P}(e'', \boxed{x}, \boxed{y})$ (for example, the TELIC event for the NP *the book* would be $read(e'', \boxed{x}, \boxed{y})$). This event is integrated into the semantics conveyed by the verb: *begin* expresses an event e in which $\boxed{x}$ *begins* another event e' (represented in the SEM feature as $begin(e, \boxed{x}, e')$). So e' corresponds to the event picked out from qualia structure of the object NP, that is, $\boxed{P}$. An additional constraint represented by the $\boxed{n}$ in the semantics is that the referent of $\boxed{y}$ must have the semantic properties specified in the semantic representation of the object NP.

When such coercing forms are combined with the representation of an NP argument which has a telic role specified, the Lascarides and Copestake (1995) default unification framework ensures that the default information specified in the qualia structure for the NP remains as default in the representation of the metonymic event. Thus the metonymic event predicted for *begin the book* would be *act_on_pred/read*. This allows for the possibility that *read* can be overridden pragmatically. If the NP argument has no telic role specified, there is no default metonymic event and the sentence is infelicitous. In this case, the interpretation of the metonymy would have to be supplied by context in order for the sentence to be acceptable. However, this comes at a cost of additional pragmatic processing and is therefore less desirable than a construction which makes the event explicit (e.g. when the complement of the verb is a full VP).[5] This can explain the relative infrequency of contextually determined metonymic coercions for the aspectual verbs observed in the corpus.

[5]This is a manifestation of Grice's Maxim of Quantity. See Grice (1975).

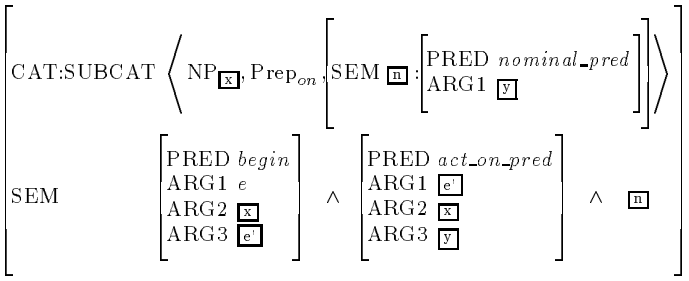


Figure 4: Lexical entry for *begin* in a {*begin on + NP*} construction

The analysis of *begin on* in Section 3.3 suggests, in contrast to *begin*, that the interpretation of this form of *begin* is entirely dependent on the context in which it appears. No defaults/conventions specified in the lexical entry of the complement NP are accessed for this phrase; pragmatics must provide all the clues to an interpretation. The lexical entry in Figure 4 captures the proposal for the behaviour of *begin* in this construction: the event which is begun (the event labelled e') is specified to be some underspecified event (*act_on_pred*) involving the referents of the two NPs in the sentence, rather than a specific event taken from the qualia structure of the object NP. Again, the extremely low frequency of this construction reflects the cost of pragmatic processing and the preference for explicit reference to an event.

5 Conclusions

I have proposed a treatment of logical metonymy which depends on lexical specification of the behaviour of nouns and verbs interacting in this construction. Coercing forms of verbs like *begin* are defined to pick events out of the qualia structure representation of their complement nouns. This follows from the fact that the overwhelming majority of cases of logical metonymies with aspectual verbs are instances of qualia-structure based coercion (very few interpretations are induced by context). However, not all nouns will have events (specifically, TELIC events) specified in their qualia structure. The corpus data presented in this paper suggests that only a very limited range of nouns allow metonymic coercion, making both a purely pragmatic account and a productive coercion account of logical metonymy untenable.

The behavior of a noun phrase in a logical metonymy construction therefore depends on conventionalisation and lexicalisation of certain events. This conventionalisation has been shown to hold across different metonymic constructions. The basis of this conventionalisation, however, remains unclear and must be investigated in future work. More generally, an investigation of the motivations for qualia structure seems necessary at this juncture, including a theory of how qualia structure is acquired when learning a language and what dictates the inclusion of information in qualia structure in the lexicon. The current situation demands further analysis of specific phenomena using corpora to determine

the verbs for which the telic role should be specified. Clearly if the proposals here are to be generally useful in a computational framework, such that lexical structures can be built in a principled way, a basis for acquisition of such conventions is required.

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